Business Process Simulation on Procedural Graphical Process Models – Structuring Overview and Paths for Future Research

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Appendix (available online via http://link.springer.com)

References (Final Sample)

The following 39 publications constitute the final sample of original research contributions with a focus on simulation of business processes using graphical process models as starting point and including a detailed description of the simulation approach.

- Antonacci, G., Calabrese, A., D'Ambrogio, A., Giglio, A., Intrigila, B. and N. L. Ghiron (2016). "A BPMN-Based Automated Approach for the Analysis of Healthcare Processes." In: *IEEE 25th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)*. Paris: France, 124-129.
- Barjis, J. (2007). "A Business Process Modeling and Simulation Method Using DEMO." In: 9th International Conference on Enterprise Information Systems (ICEIS). Ed. by J. Filipe and J. Cordeiro and J. Cardoso. Funchal: Portugal, pp. 254-265.
- Bisogno, S., Calabrese A., Gastaldi, M. and N. L. Ghiron (2016). "Combining modelling and simulation approaches: How to measure performance of business processes." *Business Process Management Journal* 22(1), 56–74.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A. and E. Paglia (2014a). "Simulation-Based Performance and Reliability Analysis of Business Processes." In: *Proceedings of the 46th Winter Simulation Conference*. Piscataway: NJ, pp. 3012-3023.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A., Paglia, E. and D. Gianni (2014b). "Empowering Business Process Simulation Through Automated Model Transformations." In: *Proceedings of the Symposium on Theory of Modeling & Simulation*. Tampa: FL, pp. 278-286.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A., Paglia, E. and D. Gianni (2014c). "A Transformation Approach to Enact the Design-Time Simulation of BPMN Models." In: *IEEE 23rd International WETICE Conference*. Parma: Italy, pp. 199-204.
- Bocciarelli, P., Pieroni, A., Gianni, D. and A. D'Ambrogio (2012). "A Model-Driven Method for Building Distributed Simulation Systems from Business Process Models." In: *Proceedings of the 44th Winter Simulation Conference*. Berlin: Germany, pp. 227:1-227:12.
- Cartelli, V., Di Modica, G. and O. Tomarchio (2016). "Complementing the BPMN to Enable Data-Driven Simulations of Business Processes." In: *12th International Enterprise and Organizational Modeling and Simulation Workshop (EOMAS)*. Ljubljana: Slovenia, pp. 22-36.
- Cartelli, V., Di Modica, G. and O. Tomarchio (2015). "A Cost-centric Model for Context-aware Simulations of Business Processes." In: *Proceedings of the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K)*. Lisbon: Portugal, pp. 303–314.
- Cartelli, V., Di Modica, G., Manni, D. and O. Tomarchio (2014a). "A Cost-Object Model for Activity Based Costing Simulation of Business Processes." In: *European Modelling Symposium (EMS)*. Pisa: Italy, pp. 221-226.
- Chan, K. L., Si, Y. W. and M. Dumas (2009). "Simulation-Based Evaluation of Workflow Escalation Strategies." In: *IEEE International Conference on e-Business Engineering (ICEBE)*. Macau: China, pp. 75-82.
- Cimino, M. and G. Vaglini (2014). "An Interval-Valued Approach to Business Process Simulation Based on Genetic Algorithms and the BPMN." *Information* 5(2), 319–356.
- D'Ambrogio, A., Paglia, E., Bocciarelli, P. & A. Giglio (2016). "Towards Performanceoriented Perfective Evolution of BPMN Models." In: *Proceedings of the Symposium on Theory of Modeling & Simulation (TMS/DEVS)*. Pasadena: CA, pp. 15:1-15:8.
- D'Ambrogio, A. and G. Zacharewicz (2016). "Resource-based Modeling and Simulation of Business Processes." In: *Proceedings of the Summer Computer Simulation Conference*. Quebec: Canada, pp. 444-451
- Desel, J. and T. Erwin (2003). "Quantitative Engineering of Business Processes with VIPbusiness." In: *Petri Net Technology for Communication-Based Systems: Advances in Petri Nets.* Ed. by Ehrig, H., Reisig, W., Rozenberg, G. and H. Weber. Berlin, Heidelberg: Springer, pp. 219-242.
- Desel, J. and T. Erwin (2000). "Modeling, Simulation and Analysis of Business Processes." In: *Business Process Management: Models, Techniques, and Empirical Studies*. Ed. by van der Aalst, W., Desel, J. and A. Oberweis. Berlin, Heidelberg: Springer Verlag, pp. 129-141.

- Desel, J., Erwin, T. and W. Stucky (1999). "Simulation und Leistungsbewertung von Geschäftsprozessen." In: *Entwicklungsmethoden für Informationssysteme und deren Anwendung: EMISA' 99 Fachtagung der Gesellschaft für Informatik e.V. (GI).* Ed. by K. Roland. Fischbachau, Wiesbaden: Vieweg+Teubner Verlag, pp. 127-146.
- García, M. T., Barcelona, M. A., Ruiz, M., García-Borgoñón, L. and I. Ramos (2014). "A Discrete-Event Simulation Metamodel for Obtaining Simulation Models from Business Process Models." In: *Information System Development*. Ed. by Escalona, J. M., Aragón, G., Linger, H., Lang, M., Barry, C. and C. Schneider. Springer. Cham, pp. 307-317.
- García-Bañuelos, L. and M. Dumas (2009). "Towards an Open and Extensible Business Process Simulation Engine." In: *Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools*. Aarhus: Denmark, pp. 199-208.
- Gladwin, B. D. and C. R. Harrell (1997). "Introduction to ProcessModel and ProcessModel 9000." In: *Proceedings of the 29th conference on Winter simulation*. Atlanta, GA, pp. 594-600.
- Gruhn, V. and T. Richter (2009). "Two-Stage Process Modeling for Simulation in BPR." In: *First International Conference on Advances in System Simulation (SIMUL)*. Porto: Portugal, pp. 132-137.
- Han, K. H., Yoo, S. K. and B. Kim (2009). "Qualitative and Quantitative Analysis of Workflows Based on the UML Activity Diagram and Petri Net." WSEAS Transaction on Information Science and Applications 6(7), 1249–1258.
- Holzmüller-Laue, S., Schubert, P., Göde, B. and K. Thurow (2013). "Visual Simulation for the BPM Based Process Automation." In: *Perspectives in Business Informatics Research: 12th International Conference*. Ed. by Kobylinski, A. and A. Sobczak. Warsaw: Poland, Springer, pp. 48-62.
- Joschko, P. (2014). "Kopplung von zeitdiskreten, domänenspezifischen Simulationsmodellen an Prozessmodelle der BPMN 2.0." Universität Hamburg.
- Kanalici, I., Erdem, A.S. and M. Ozturan (2009). "Integration of a simulation platform into a business process management tool." In: *Proceedings of the European and Mediterranean Conference on Information Systems, EMCIS.*
- Kloos, O. (2014). Generierung von Simulationsmodellen auf der Grundlage von Prozessmodellen. Ilmenau: Univ.-Verl. Ilmenau.
- Kloos, O., Nissen, V. and M. Petsch (2009). "From process to simulation-a transformation model approach." In: *3rd International Workshop on Enterprise Modelling and Information Systems Architectures*. Ulm, Germany: pp. 83–96.
- Kloos, O., Nissen, V., Petsch, M. and H. Schorcht (2011). "Service Modelling as a Basis for Simulation." *Enterprise Modelling and Information Systems Architectures* 6(2), 21–34.
- Kloos, O., Schorcht, H., Petsch, M. and V. Nissen (2010). "Dienstleistungsmodellierung als Grundlage für eine Simulation." In: *Dienstleistungsmodellierung 2010*. Ed. by O. Thomas and M. Nüttgens. Physica-Verlag. Heidelberg: Germany, pp. 86–106.
- Lübbecke, P., Reiter, M., Fettke, P. and P. Loos (2015). "Simulation-Based Decision Support for the Reduction of the Energy Consumption of Complex Business Processes." In: *System Sciences (HICSS)*, 2015 48th Hawaii International Conference On. pp. 866–875.
- Oberweis, A. (1996). *Modellierung und Ausführung von Workflows mit Petri-Netzen*. Teubner-Reihe Wirtschaftsinformatik. Stuttgart: Teubner.
- Pufahl L., Wong TY. and M. Weske (2018). "Design of an Extensible BPMN Process Simulator." In: *Business Process Management Workshops*. Ed. by E. Teniente and M. Weidlich, Springer: Cham, pp. 782–795.
- Rozinat, A., Wynn, M.T., Aalst, W.M.P. van der, Hofstede, A.H.M. ter and C.J. Fidge (2009). "Workflow simulation for operational decision support." *Data & Knowledge Engineering* 68(9), 834–850.
- Rozinat, A., Wynn, M.T., Aalst, W.M.P. van der, Hofstede, A.H.M. ter and C.J. Fidge (2008). "Workflow Simulation for Operational Decision Support Using Design, Historic and State Information." In: *Business Process Management, 6th International Conference, BPM 2008*. Milan: Italy. pp. 196–211.
- Stankevicius, K. and O. Vasilecas (2016). "An approach on long running business process modelling and simulation." In: 2016 Open Conference of Electrical, Electronic and Information Sciences (EStream). pp. 1–4.
- Vasilecas, O., Smaižys, A. and A. Rima (2013). "Business process modelling and simulation: hybrid method for concurrency aspect modelling." *Baltic Journal of Modern Computing*. 1(3-4), 228–243.

- Wynn, M.T., Dumas, M., Fidge, C.J., Hofstede, A.H.M. ter and W.M.P. van der Aalst (2008). "Business Process Simulation for Operational Decision Support." In: *Business Process Management Workshops, BPM 2007 International Workshops, BPI, BPD, CBP, ProHealth, RefMod, Semantics4ws.* Brisbane: Australia, pp. 66–77.
- Xie, Y. (2008a). "Integrating UML and GPSS for Business Process Modeling and Simulation." In: *Proceedings of the 8th WSEAS International Conference on Robotics, Control and Manufacturing Technology, ROCOM'08.* World Scientific and Engineering Academy and Society (WSEAS). Stevens Point: WI, pp. 64–69.
- Xie, Y. (2008b). "Process modeling and simulation based on extended UML activity and GPSS." In: 2008 IEEE International Conference on Automation and Logistics. IEEE, pp. 2931–2935.

References (Raw Dataset)

In total, 305 unique publications on business process simulation were identified in searches in electronic databases, searches in selected journals and conference proceedings as well as backward and forward searches.

- Abed, S.Y. (2008). "A Simulation Study to Increase the Capacity of a Rusk Production Line." WSEAS Trans. Info. Sci. and App. 5(9), Article No. 7, pp. 1-10.
- Adamczak, M., Domański, R., Cyplik, P. and Ż. Pruska (2013). "THE TOOLS FOR EVALUATING LOGISTICS PROCESSES." LogForum-Scientific Journal of Logistics, 9(4), 255–263.
- Adamides, E.D. and N. Karacapilidis (2006). "A knowledge centred framework for collaborative business process modelling." *Business Process Management Journal* 12(5), 557–575.
- Aguilar, M., Rautert, T. and A.J. Pater (1999). "Business process simulation: a fundamental step supporting process centered management." In: *Proceedings of the 31st Conference on Winter Simulation: Simulation—a Bridge to the Future-Volume 2, WSC '99. ACM.* New York: NY, pp. 1383–1392.
- Aguilar-Savén, R.S. (2004). "Business process modelling: Review and framework." *International Journal of Production Economics* 90(2), 129–149.
- Aksyonov, K., Spitsina, I., Bykov, E., Kai, W. and E. Smoliy (2009). "Multiple Approaches Integration for Computer-supported Software Development." In: *Proceedings of the 21st Annual International Conference on Chinese Control and Decision Conference, CCDC'09.* IEEE Press, Piscataway: NJ, pp. 4960–4964.
- Aksyonov, Konstantin A., Bykov, E.A., Smoliy, E.F. and A.A. Khrenov (2008). "Industrial Enterprises Business Processes Simulation with BPsim.MAS." In: *Proceedings of the 40th Conference on Winter Simulation, WSC '08. Winter Simulation Conference.* Miami: FL, pp. 1669–1677.
- Aksyonov, K. A., Spitsina, I.A., Bykov, E.A., E.F. Smoliy (2008). "Computer aided enterprise information systems engineering with BPsim studio." In: 2008 IEEE International Conference on Systems, Man and Cybernetics. pp. 3497–3501.
- Albores-Barajas, P., Ball, P.D. and J. MacBryde (2002). "Generic business process models for e-business in manufacturing companies: is simulation useful?" In: *Engineering Management Conference*, 2002. IEMC '02. 2002 IEEE International. Vol. 2, pp. 685–690.
- Amadi-Echendu, J.E. and S.A. Oosthuizen (2016). "Simulation modelling of logistics for handling biowaste from waste water treatment." In: 2016 Portland International Conference on Management of Engineering and Technology (PICMET). pp. 1808–1814.
- An, L. and J.-J. Jeng (2005). "On developing system dynamics model for business process simulation." In: *Proceedings of the 37th Conference on Winter Simulation, WSC '05. IEEE.* Orlando: FL, pp. 2068–2077.
- Antonacci, G., Calabrese, A., D'Ambrogio, A., Giglio, A., Intrigila, B. and N. L. Ghiron (2016). "A BPMN-Based Automated Approach for the Analysis of Healthcare Processes." In: *IEEE 25th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)*. Paris: France, 124-129.
- April, J., Better, M., Glover, F., Kelly, J. and M. Laguna (2006). "Enhancing Business Process Management with Simulation Optimization." In: *Proceedings of the 38th Conference on Winter Simulation, WSC '06. Winter Simulation Conference.* Monterey: CA, pp. 642–649.
- Avni, T. and A. Greenland (2009). "Communicating with management about the benefits of business process simulation." In: *Proceedings of the 2009 Winter Simulation Conference (WSC), WSC '09. Winter Simulation Conference.* Austin: TX, pp. 2915–2919.
- Azadeh, A., Nassiri, S. and M. Asadzadeh (2010). "Modeling and Optimization of a Purchasing System in Uncertain Environments by an Integrated Fuzzy Business Process Simulation and Data Envelopment Analysis: A Novel Approach." In: *Proceedings of the 2010 Spring Simulation Multiconference, SpringSim '10.* Society for Computer Simulation International. San Diego: CA, pp. 169:1–169:8.
- Azadeh, M.A., Harandi, S.J. and H. Izadbakhsh (2006). "Re-Engineering Design of a Purchasing System by BPS and PCA." In: 2006 4th IEEE International Conference on Industrial Informatics. pp. 863–869.

- Bahrami, A., Sadowski, D. and S. Bahrami (1998). "Enterprise architecture for business process simulation." In: *Proceedings of the 30th Conference on Winter Simulation, WSC* '98. IEEE Computer Society Press. Los Alamitos: CA, pp. 1409–1414.
- Banks, J. and L. Chwif (2011). "Warnings about simulation." Journal of Simulation 5(4), 279–291.
- Barber, K.D., Dewhurst, F.W., Burns, R.L.D.H., and J.B.B. Rogers (2003). "Business-process modelling and simulation for manufacturing management: A practical way forward." *Business Process Management Journal* 9(4), 527–542.
- Barjis, J. (2010). "Collaborative, Participative, and Interactive Modeling and Simulation in Systems Engineering." In: *Proceedings of the 2010 Spring Simulation Multiconference, SpringSim '10*. Society for Computer Simulation International. San Diego: CA, pp. 68:1–68:6.
- Barjis, J. (2008). "The Importance of Business Process Modeling in Software Systems Design." *Science of Computer Programming* 71(1), 73–87.
- Barjis, J. (2007). "A Business Process Modeling and Simulation Method Using DEMO." In: 9th International Conference on Enterprise Information Systems (ICEIS). Ed. by J. Filipe and J. Cordeiro and J. Cardoso. Funchal: Portugal, pp. 254-265.
- Barjis, J., Rychkova, I. and L. Yilmaz (2011). "Modeling and Simulation Driven Software Development." In: *Proceedings of the 2011 Emerging M&S Applications in Industry and Academia Symposium, EAIA '11*. Society for Computer Simulation International. San Diego: CA, pp. 4–10.
- Barjis, J. and A. Verbraeck (2010). "The Relevance of Modeling and Simulation in Enterprise and Organizational Study." In: 6th International Enterprise and Organizational Modeling and Simulation Workshop (EOMAS). Hammamet, Tunisia: pp. 15–26.
- Baumgart, A., Zoeller, A., Denz, C., Bender, H.-J., Heinzl, A. and E. Badreddin (2007). "Using computer simulation in operating room management: impacts on process engineering and performance." In: 40th Annual Hawaii International Conference On System Sciences, 2007. IEEE, pp. 131–131.
- Bazoun, H., Bouanan, Y., Zacharewicz, G., Ducq, Y. and H. Boye (2014). "Business Process Simulation: Transformation of BPMN 2.0 to DEVS Models (WIP)." In: *Proceedings of the Symposium on Theory of Modeling & Simulation DEVS Integrative, DEVS '14*. Society for Computer Simulation International. San Diego: CA, pp. 20:1–20:7.
- Becker, J., Rosemann, M. and C. von Uthmann (2000). "Guidelines of Business Process Modeling." In: *Business Process Management: Models, Techniques, and Empirical Studies.* Ed. by W. van der Aalst, J. Desel and A. Oberweis. Springer. Berlin, Heidelberg, pp. 30–49.
- Betz, S., Hickl, S. and A. Oberweis (2011). "Risk-Aware Business Process Modeling and Simulation Using XML Nets." In: 2011 IEEE 13th Conference on Commerce and Enterprise Computing. pp. 349–356.
- Bhaskar, R., Lee, H.S., Levas, A., Pétrakian, R., Tsai, F. and B. Tulskie (1994). "Analyzing and reengineering business processes using simulation." In: *Simulation Conference Proceedings*, 1994. Winter. IEEE, pp. 1206–1213.
- Bisogno, S., Calabrese A., Gastaldi, M. and N. L. Ghiron (2016). "Combining modelling and simulation approaches: How to measure performance of business processes." *Business Process Management Journal* 22(1), 56–74.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A. and E. Paglia (2014a). "Simulation-Based Performance and Reliability Analysis of Business Processes." In: *Proceedings of the 46th Winter Simulation Conference*. Piscataway: NJ, pp. 3012-3023.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A., Paglia, E. and D. Gianni (2014c). "A Transformation Approach to Enact the Design-Time Simulation of BPMN Models." In: *IEEE 23rd International WETICE Conference*. Parma: Italy, pp. 199-204.
- Bocciarelli, P., D'Ambrogio, A., Giglio, A., Paglia, E. and D. Gianni (2014b). "Empowering Business Process Simulation Through Automated Model Transformations." In: *Proceedings of the Symposium on Theory of Modeling & Simulation*. Tampa: FL, pp. 278-286.
- Bocciarelli, P., Pieroni, A., Gianni, D. and A. D'Ambrogio (2012). "A Model-Driven Method for Building Distributed Simulation Systems from Business Process Models." In: *Proceedings of the 44th Winter Simulation Conference*. Berlin: Germany, pp. 227:1-227:12.
- Bosilj-Vuksic, V., Ceric, V. and V. Hlupic (2007). "Criteria for the Evaluation of Business Process Simulation Tools." *Interdisciplinary Journal of Information, Knowledge, and Management* 2, 73–88.

- Boukelkoul, S. and R. Maamri (2016). "Model-based DEVS for modeling and simulation of resource-constrained business processes." In: 2016 International Conference on Advanced Aspects of Software Engineering (ICAASE). pp. 1–6.
- Brann, D.M. and B.C. Kulick (2002). "Simulation of Customer-focused Business Processes: Simulation of Restaurant Operations Using the Restaurant Modeling Studio." In: *Proceedings of the 34th Conference on Winter Simulation: Exploring New Frontiers*. Winter Simulation Conference. San Diego: CA, pp. 1448–1453.
- Bratanis, K., Dranidis, D. and A.J.H. Simons (2010). "Towards Run-time Monitoring of Web Services Conformance to Business-level Agreements." In: *Proceedings of the 5th International Academic and Industrial Conference on Testing Practice and Research Techniques, TAIC PART'10.* Springer-Verlag. Berlin, Heidelberg, pp. 203–206.
- Briccarello, P., Bruno, G. and E. Ronco (1995). "REBUS: an object-oriented simulator for business processes." In: *Proceedings of the 28th Annual Simulation Symposium*. IEEE Computer Society. Washington DC: USA, pp. 269–277.
- Bridgeland, D. and S. Becker (1994). "Simulation satyagraha, a successful strategy for business process reengineering." In: *Simulation Conference Proceedings*, 1994. Winter. IEEE. pp. 1214–1220.
- Brom, C. and P. Kocáb (2005). "Virtual Agents in a Simulation of an ISO-Company." In: *Lecture Notes in Computer Science*. Ed. by T. Panayiotopoulos, J. Gratch, R. Aylett, D. Ballin, P. Olivier and T. Springer-Verlag. London: UK, pp. 494–494.
- Brozek, J., Merunka, V. and I. Merunková (2010). "Organization Modeling and Simulation Using BORM Approach." In: *Enterprise and Organizational Modeling and Simulation 6th International Workshop, EOMAS 2010, Held at CAiSE 2010.* Hammamet: Tunisia, pp. 27–40.
- Bulbeck, J.M., Boardman, J.T. and J.S. Sagoo (1997). "Business process simulation using soft systems modelling." In: *Fifth International Conference on Factory 2000 The Technology Exploitation Process.* pp. 437–442.
- Cai, L., Tong, W., Zhu, B. and J. Zhang (2009). "Modeling Software Testing Process Using HTCPN." In: 2009 Fourth International Conference on Frontier of Computer Science and Technology. pp. 429–434.
- Camara, M.S., Ducq, Y. and R. Dupas (2014). "A methodology for the evaluation of interoperability improvements in inter-enterprises collaboration based on causal performance measurement models." *International Journal of Computer Integrated Manufacturing* 27(2), 103–119.
- Caridi, M., Cavalieri, S., Pirovano, C. and G. Diazzi (2004). "Assessing the impact of e-Procurement strategies through the use of business process modelling and simulation techniques." *Production Planning & Control* 15(7), 647–661.
- Cartelli, V., Di Modica, G. and O. Tomarchio (2016). "Complementing the BPMN to Enable Data-Driven Simulations of Business Processes." In: *12th International Enterprise and Organizational Modeling and Simulation Workshop (EOMAS)*. Ljubljana: Slovenia, pp. 22-36.
- Cartelli, V., Di Modica, G. and O. Tomarchio (2015). "A Cost-centric Model for Context-aware Simulations of Business Processes." In: *Proceedings of the 7th International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management (IC3K)*. Lisbon: Portugal, pp. 303–314.
- Cartelli, V., Di Modica, G. and O. Tomarchio (2014b). "A resource-aware simulation tool for business processes." In: *11th International Conference on e-Business (ICEB)*. Vienna: Austria, pp. 123-133.
- Cartelli, V., Di Modica, G., Manni, D. and O. Tomarchio (2014a). "A Cost-Object Model for Activity Based Costing Simulation of Business Processes." In: *European Modelling Symposium (EMS)*. Pisa: Italy, pp. 221-226.
- Chan, K. L., Si, Y. W. and M. Dumas (2009). "Simulation-Based Evaluation of Workflow Escalation Strategies." In: *IEEE International Conference on e-Business Engineering (ICEBE)*. Macau: China, pp. 75-82.
- Chandra, A. and V. Krishna (2011). "Enabling Dynamic Analysis of Project Plan through Transformations into Business Processes." In: 2011 Annual SRII Global Conference. pp. 743–748.
- Chen, L., Liu, X., Yu, H., Yang, C. and H. Wang (2011). "Workflow Simulation of Equipment Command Based on HLA." In: *2011 Third International Conference on Communications and Mobile Computing*. pp. 401–404.

- Cheng, S., Xu, X., Wang, G. and Q. Li (2005). "An agile method of modeling business process simulation for virtual enterprises." In: *IEEE International Conference on E-Business Engineering (ICEBE'05)*. pp. 87–92.
- Cheung, Y. and J. Bal (1998). "Process analysis techniques and tools for business improvements." *Business Process Management Journal* 4(4), 274–290.
- Cho, Y.H. and J.K. Kim (1998). "Role-based approach to business process simulation modeling and analysis." *Computers & Industrial Engineering* 35(1/2), 343–346.
- Cimino, M. and G. Vaglini (2014). "An Interval-Valued Approach to Business Process Simulation Based on Genetic Algorithms and the BPMN." *Information* 5(2), 319–356.
- Currie, W. and V. Hlupic (2000). "Simulation modelling: The link between change management panaceas." In: *Proceedings of the 2000 Winter Simulation Conference*. Ed. by J.A. Joines, R.R. Barton, K. Kang and P.A. Fishwick. IEEE, pp. 2022–2028.
- Dalal, M.A., Erraguntla, M. and B. C. Perakath (1997). "An introduction to using ProSim for business process simulation and analysis." In: *Proceedings of the 29th Conference on Winter Simulation, WSC* '97. IEEE Computer Society. Washington DC: USA, pp. 718–724.
- D'Ambrogio, A., Paglia, E., Bocciarelli, P. & A. Giglio (2016). "Towards Performance-oriented Perfective Evolution of BPMN Models." In: *Proceedings of the Symposium on Theory of Modeling & Simulation (TMS/DEVS)*. Pasadena: CA, pp. 15:1-15:8.
- D'Ambrogio, A. and G. Zacharewicz (2016). "Resource-based Modeling and Simulation of Business Processes." In: *Proceedings of the Summer Computer Simulation Conference*. Quebec: Canada, pp. 444-451.
- Damij, N. (2007). "Business process modelling using diagrammatic and tabular techniques." *Business Process Management Journal* 13(1), 70–90.
- Damij, N. (2005). "Simulation of the Health Care Process Surgery." In: *Proceedings of the 4th WSEAS/IASME International Conference on System Science and Simulation in Engineering, ICOSSSE'05.* World Scientific and Engineering Academy and Society (WSEAS). Stevens Point: WI, pp. 144–148.
- Damij, N., Damij, T., Grad, J. and F. Jelenc (2008). "A Methodology for Business Process Improvement and IS Development." *Information and Software Technology* 50(11), 1127–1141.
- de Cesare, S. and A. Serrano (2006). "Collaborative Modeling Using UML and Business Process Simulation." In: *Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS)*. Kauai: HI.
- de Vreede, G.-J., Verbraeck, A. and D.T.T. van Eijck (2003). "Integrating the Conceptualization and Simulation of Business Processes: A Modeling Method and Arena Template." *SIMULATION* 79(1), 43–55
- Dennis, S., King, B., Hind, M. and S. Robinson (2000). "Applications of business process simulation and lean techniques in British Telecommunications PLC." In: *Proceedings of the 32Nd Conference on Winter Simulation, WSC '00.* Society for Computer Simulation International. San Diego: CA, pp. 2015–2021.
- Desel, J. (2000). "Validation of Process Models by Construction of Process Nets." In: *Business Process Management: Models, Techniques, and Empirical Studies*. Ed. by W. van der Aalst, J. Desel and A. Oberweis. Springer. Berlin, Heidelberg, pp. 110–128.
- Desel, J. and T. Erwin (2003). "Quantitative Engineering of Business Processes with VIPbusiness." In: *Petri Net Technology for Communication-Based Systems: Advances in Petri Nets.* Ed. by Ehrig, H., Reisig, W., Rozenberg, G. and H. Weber. Berlin, Heidelberg: Springer, pp. 219-242.
- Desel, J. and T. Erwin (2000). "Modeling, Simulation and Analysis of Business Processes." In: *Business Process Management: Models, Techniques, and Empirical Studies*. Ed. by van der Aalst, W., Desel, J. and A. Oberweis. Berlin, Heidelberg: Springer Verlag, pp. 129-141.
- Desel, J., Erwin, T. and W. Stucky (1999). "Simulation und Leistungsbewertung von Geschäftsprozessen." In: *Entwicklungsmethoden für Informationssysteme und deren Anwendung: EMISA' 99 Fachtagung der Gesellschaft für Informatik e.V. (GI).* Ed. by K. Roland. Fischbachau, Wiesbaden: Vieweg+Teubner Verlag, pp. 127-146.
- Di Leva, A., Femiano, S. and L. Giovo (2011). "Process Analysis and Reengineering in the Health Sector." In: *Proceedings of the Second International Conference on Information Technology in Bioand Medical Informatics, ITBAM'11*. Springer-Verlag. Berlin, Heidelberg, pp. 106–107.

- Doomun, R. and N.V. Jungum (2008). "Business process modelling, simulation and reengineering: call centres." *Business Process Management Journal* 14(6), 838–848.
- Du, X., Gu, C. and N. Zhu (2012). "A survey of business process simulation visualization." In: 2012 International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering. pp. 43–48.
- Eatock, J., Serrano, A., Giaglis, G.M. and R.J. Paul (2002). "Evaluating information technology: lessons from integrating business process simulation with computer network simulation." In: *Systems Engineering for Business Process Change*. Ed. by P. Henderson. Springer-Verlag New York, Inc. New York: NY, pp. 150–159.
- Eichhorn, D., Koschmider, A., Li, Y., Sturzel, P., Oberweis, A. and R. Trunko (2009). "3D Support for Business Process Simulation." In: *Proceedings of the 2009 33rd Annual IEEE International Computer Software and Applications Conference*. pp. 73–80.
- Fatyani, T., Iijima, J. and J. Park (2014). "Transformation of DEMO Model into Coloured Petri Net." In: *Proceedings of the International Joint Conference on Knowledge Discovery, Knowledge Engineering and Knowledge Management Volume 2, IC3K 2014.* SCITEPRESS Science and Technology Publications, Lda. Portugal, pp. 388–396.
- Feller, J., Hirvensalo, A. and R. Smeds (2005). "Inter-partner process learning in collaborative R&D—a case study from the telecommunications industry." *Production Planning & Control* 16(4), 388–395
- Ferguson, R.B. (2005). "BPM software targets dynamic processes." *eWeek*. URL: http://www.eweek.com/enterprise-apps/bpm-software-targets-dynamic-processes (visited on 10/10/2017).
- Ferilli, S. (2014). "WoMan: Logic-Based Workflow Learning and Management." *IEEE Transactions on Systems, Man, and Cybernetics: Systems* 44(6), 744–756.
- Fill, H.-G. and D. Karagiannis (2013). "On the Conceptualisation of Modelling Methods using the ADOxx Meta Modelling Platform." *Enterprise Modelling and Information Systems Architectures An International Journal* 8(1), 4–25.
- Floss, P. (1997). "Requirements For Transitioning Business Process Simulation Models To Real-time Operational Systems." In: *Proceedings of the 29th Conference on Winter Simulation, WSC '97. IEEE Computer Society.* Washington DC: USA, pp. 1357–1360.
- Frank, U. and B. van Laak (2003). *Anforderungen an Sprachen zur Modellierung von Geschäftsprozessen*. Technical Report 34. Universität Koblenz-Landau.
- Frank, U., Squazzoni, F. and K.G. Troitzsch (2009). "EPOS-Epistemological Perspectives on Simulation: An Introduction." In: *Epistemological Aspects of Computer Simulation in the Social Sciences: Second International Workshop, EPOS 2006.* Ed. by F. Squazzoni. Springer. Brescia: Italy, pp. 1–11.
- Fu-ren Lin, Yu-Hua Pai (2000). "Using Multi-Agent Simulation and Learning to Design New Business Processes." *IEEE Transactions on Systems, Man & Cybernetics: Part A* 30(3), 380–384.
- García, M. T., Barcelona, M. A., Ruiz, M., García-Borgoñón, L. and I. Ramos (2014). "A Discrete-Event Simulation Metamodel for Obtaining Simulation Models from Business Process Models." In: *Information System Development*. Ed. by Escalona, J. M., Aragón, G., Linger, H., Lang, M., Barry, C. and C. Schneider. Springer: Cham, pp. 307-317.
- García-Bañuelos, L. and M. Dumas (2009). "Towards an Open and Extensible Business Process Simulation Engine." In: *Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools*. Aarhus: Denmark, pp. 199-208.
- Gawin, B. and B. Marcinkowski (2015). "How Close to Reality is the "as-is" Business Process Simulation Model?" *Organizacija* 48(3), 155–175.
- Giaglis, G.M., Hlupic, V., Vreede, G.-J. de and A. Verbraeck (2005). "Synchronous design of business processes and information systems using dynamic process modelling." *Business Process Management Journal* 11(5), 488–500.
- Giaglis, G.M. and R.J. Paul (1996). "It's Time to Engineer Re-engineering: Investigating the Potential of Simulation Modelling for Business Process Redesign." In: *Business Process Modelling*. Ed. by B. Scholz-Reiter and E. Stickel. Springer. Berlin, Heidelberg, pp. 313–332.
- Giaglis, G. M., Paul, R. J. and G. I. Doukidis (1996). "Simulation for Intra- and Inter-Organisational Business Process Modelling." In: *Proceedings of the 28th Winter Simulation Conference*. Atlanta: GA, pp. 1297-1304.

- Giaglis, G. M., Paul, R. J. and V. Hlupic (1999). "Integrating Simulation in Organizational Design Studies." *International Journal of Information Management* 19(3), 219–236.
- Giaglis, G.M., Paul, R.J. and A. Serrano (1999b). "Reconciliation of business and systems modelling via discrete event simulation." In: *Proceedings of the 1999 Winter Simulation Conference*. Ed. by P.A. Farrington, H.B. Nembhard, D.T. Sturrock, and G.W. Evans. IEEE, pp. 1403–1409.
- Gladwin, B. and K. Tumay (1994). "Modeling Business Processes with Simulation Tools." In: *Proceedings of the 26th Winter Simulation Conference*. Arlington: VA, pp. 114-121.
- Gladwin, B. D. and C. R. Harrell (1997). "Introduction to ProcessModel and ProcessModel 9000." In: *Proceedings of the 29th conference on Winter simulation*. Atlanta, GA, pp. 594-600.
- Glykas, M. (2012). Business Process Management: Theory and Applications. Springer Publishing Company, Incorporated.
- Gorbunov, V., Htet, N.W. and A. Balashov (2016). "Risk analysis in the model of the business process." In: 2016 IEEE NW Russia Young Researchers in Electrical and Electronic Engineering Conference (EIConRusNW). pp. 811–813.
- Grabau, M., Conley, Q. and M. Marshall (2013). "Business Process Simulation for Claims Transformation." In: 2013 Winter Simulations Conference (WSC), WSC '13. IEEE Press. Piscataway: NJ, pp. 1784–1792.
- Grabau, M. and F. Grange (1998). "Granularity, affordability and utility in business process simulation." In: *Proceedings of the 30th Conference on Winter Simulation, WSC '98.* IEEE Computer Society Press. Los Alamitos: CA, pp. 1351–1356.
- Grabau, M.R. (2001). "Averages kill (or how to sell business process simulation)." In: *Proceedings of the 33Nd Conference on Winter Simulation, WSC '01*. IEEE Computer Society. Washington DC: USA, pp. 1262–1265.
- Greasley A. (2003). "Using business-process simulation within a business-process reengineering approach." *Business Process Management Journal* 9(4), 408–420.
- Greasley, A. (2006). "Using process mapping and business process simulation to support a process-based approach to change in a public sector organisation." *Technovation* 26(1), 95–103.
- Greasley, A. (2004). "A redesign of a road traffic accident reporting system using business process simulation." *Business Process Management Journal* 10(6), 635–644.
- Greasley, A. (2003). "Using Business-Process Simulation within a Business-Process Reengineering Approach." *Business Process Management Journal* 9(4), 408–420.
- Greasley, A. (2000). "Effective uses of business process simulation." In: 2000 Winter Simulation Conference Proceedings. Volume No. 2, pp. 2004–2009.
- Greasley, A. (2000). "Process and enterprise improvement: Effective uses of Business process simulation." In: *Proceedings of the 32nd Conference on Winter Simulation, WSC '00*. Society for Computer Simulation International. San Diego: CA, pp. 2004–2009.
- Gregoriades, A. and A. Sutcliffe (2008). "A socio-technical approach to business process simulation." *Decision Support Systems* 45(4), 1017–1030.
- Grosz, D. (1998). "Application of business process modeling at Timberland." In: 1998 Winter Simulation Conference Proceedings. IEEE, pp. 1357–1361.
- Gruber, J.W., Smiddy, R., Watson, J.M. and E.J. Williams (2015). "Simulation helps local grocery store compete effectively against large chains." In: 2015 International Conference on Industrial Engineering and Operations Management (IEOM). pp. 1–4.
- Gruhn, V. and T. Richter (2009). "Two-Stage Process Modeling for Simulation in BPR." In: First International Conference on Advances in System Simulation (SIMUL). Porto: Portugal, pp. 132-137.
- Guizzardi, G. and G. Wagner (2011). "Can BPMN be Used for Making Simulation Models?" *In: 7th International Enterprise and Organizational Modeling and Simulation Workshop (EOMAS)*. London: UK, pp. 100-115.
- Haho, P. (2004). "Paths to deutero-learning through successive process simulations: a case study." *Knowledge & Process Management* 11(4), 239–251.
- Hamid, A., Rozan, M., Ibrahim, R., Deris, S., Rushdi, H.N. and M.N.M. Yunus (2013). "Understanding and designing business process modelling for emergency plan." In: *2013 International Conference on Research and Innovation in Information Systems (ICRIIS)*. pp. 564–569.
- Hamilton, D., Michael, K. and S.F. Wamba (2009). "Using RFID to Overcome Inventory Control Challenges: A Proof of Concept." In: *Proceedings of the 6th International Conference on Ubiquitous Intelligence and Computing, UIC '09.* Springer-Verlag. Berlin, Heidelberg, pp. 353–366.

- Han, K.H. and J.G. Kang (2007). "Two-stage Process Analysis Using the Process-based Performance Measurement Framework and Process Simulation." In: 5th ACIS International Conference on Software Engineering Research, Management Applications (SERA 2007). pp. 31–37.
- Han, K.H., Kang, J.G. and M. Song (2009a). "Two-stage Process Analysis Using the Process-based Performance Measurement Framework and Business Process Simulation." *Expert Systems with Applications* 36(3), 7080–7086.
- Han, K. H., Yoo, S. K. and B. Kim (2009). "Qualitative and Quantitative Analysis of Workflows Based on the UML Activity Diagram and Petri Net." WSEAS Transaction on Information Science and Applications 6(7), 1249–1258.
- He, W., Li, H., Cui, L. and S. Lu (2016). "Maximizing the Availability of Process Services in Mobile Computing Environments." In: *2016 IEEE International Conference on Services Computing (SCC)*. pp. 483–490.
- He, Y., Zhao, L., Wu, Z. and F. Li (2009). "Simulation Modeling and Analysis of Business Process." In: 2009 Second International Symposium on Electronic Commerce and Security. pp. 391–395.
- Heinrich, R., Merkle, P., Henss, J. and B. Paech (2017). "Integrating Business Process Simulation and Information System Simulation for Performance Prediction." Software & Systems Modeling 16(1), 257–277.
- Helle, P. and P. Levier (2010). "From Integrated Architecture to Integrated Executable Architecture."
 In: 2010 19th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises. pp. 148–153.
- Hlupic, V., de Vreede, G. and A. Orsoni (2006). "Modelling and simulation techniques for business process analysis and re-engineering." *International Journal of Simulation* 7(4), 1–8.
- Holzmüller-Laue, S., Schubert, P., Göde, B. and K. Thurow (2013). "Visual Simulation for the BPM Based Process Automation." In: *Perspectives in Business Informatics Research: 12th International Conference*. Ed. by Kobylinski, A. and A. Sobczak. Warsaw: Poland, Springer, pp. 48-62.
- Hook, G. (2011). "Business Process Modeling and Simulation." In: *Proceedings of the Winter Simulation Conference, WSC '11*. Winter Simulation Conference. Phoenix: AZ, pp. 773–778.
- Hrebík, R., Merunka, V., Kosejková, Z. and P. Kupka (2015). "Object-Oriented Conceptual Modeling and Simulation of Health Care Processes." In: *Enterprise and Organizational Modeling and Simulation 11th International Workshop, EOMAS 2015, Held at CAiSE 2015.* Stockholm: Sweden, pp. 49–60.
- Hudert, S., Niemann, C. and T. Eymann (2010). "On computer simulation as a component in information systems research." In: *International Conference on Design Science Research in Information Systems*. Springer, pp. 167–179.
- Indihar-Stemberger, M., Popovic, A. and V. Bosilj-Vuksic (2003). "Simulation and information systems modelling: a framework for business process change." In: *Proceedings 15th European Simulation Symposium*.
- Jahangirian, M., Eldabi, T., Naseer, A., Stergioulas, L.K. and T. Young (2010). "Simulation in manufacturing and business: A review." *European Journal of Operational Research* 203 (1), 1–13.
- Jakoubi, S., Tjoa, S., Goluch, S. and G. Kitzler (2010). "A Formal Approach Towards Risk-Aware Service Level Analysis and Planning." In: *2010 International Conference on Availability, Reliability and Security.* pp. 180–187.
- Jansen-Vullers, M. and M. Netjes (2006). "Business Process Simulation A Tool Survey." In: Workshop and Tutorial on Practical Use of Coloured Petri Nets and the CPN Tools. Aarhus: Denmark.
- Jansen-Vullers, M.H., Kleingeld, P.A.M., Loosschilder, M.W.N.C., Netjes, M. and H.A. Reijers (2008a). "Trade-offs in the Performance of Workflows: Quantifying the Impact of Best Practices." In: *Proceedings of the 2007 International Conference on Business Process Management, BPM'07*. Springer-Verlag, Berlin, Heidelberg, pp. 108–119.
- Jansen-Vullers, M.H., Kleingeld, P.A.M. and M. Netjes (2008b.) "Quantifying the Performance of Workflows." *Information Systems Management* 25(4), 332–343.
- Januszczak, J. and G. Hook (2011). "Simulation Standard for Business Process Management." In: *Proceedings of the Winter Simulation Conference, WSC '11*. Winter Simulation Conference. Phoenix: AZ, pp. 741–751.

- Jeffery, R. (2006). "Exploring the Business Process-software Process Relationship." In: *Proceedings of the 2006 International Conference on Software Process Simulation and Modeling, SPW/ProSim'06.* Springer-Verlag. Berlin, Heidelberg, pp. 11–14.
- Jian, P., Zou, P. and W. Xiong (2011). "Research on business process simulation method of architecture based on IDEF3." In: 2011 International Conference On Management Science and Industrial Engineering (MSIE). pp. 1130–1133.
- Jones, J. (1995). "SIMPROCESS III: Object-oriented Business Process Simulation." In: *Proceedings of the 27th Conference on Winter Simulation, WSC '95*. IEEE Computer Society. Washington DC: USA, pp. 548–551.
- Joschko, P. (2014). "Kopplung von zeitdiskreten, domänenspezifischen Simulationsmodellen an Prozessmodelle der BPMN 2.0." University of Hamburg.
- Käkölä, T.K. and K.L. Koota (1999). "Redesigning computer-supported work processes with dual information systems: the work process benchmarking service." *Journal of Management Information Systems* 16(1), 87–119.
- Kalbasi, A., Krishnamurthy, D., Rolia, J. and S. Singhal (2014). "Simulation by Example for Complex Systems." In: *Proceedings of the 2014 Winter Simulation Conference, WSC '14*. IEEE Press, Piscataway: NJ, pp. 974–985.
- Kalibatiene, D., Vasilecas, O. and V. Bobrovs (2016). "Resource Modelling for the Rule- and Context-Based Dynamic Business Process Simulation." In: *Proceedings of the 17th International Conference on Computer Systems and Technologies 2016, CompSysTech '16.* ACM. New York: NY, pp. 17–24.
- Kalibatiene, D., Vasilecas, O. and T. Rusinaite (2015). "Implementing a Rule-Bbased Dynamic Business Process Modelling and Simulation." In: 2015 Open Conference of Electrical, Electronic and Information Sciences (EStream). pp. 1–4.
- Kamrani, F., Ayani, R. and A. Karimson (2010). "Optimizing a Business Process Model by Using Simulation." In: *Proceedings of the 2010 IEEE Workshop on Principles of Advanced and Distributed Simulation, PADS '10.* IEEE Computer Society. Washington: DC, pp. 40–47.
- Kanalici, I., Erdem, A.S. and M. Ozturan (2009). "Integration of a simulation platform into a business process management tool." In: *Proceedings of the European and Mediterranean Conference on Information Systems, EMCIS.*
- Karduck, A.P., Sienou, A., Lamine, E. and H. Pingaud (2007). "Collaborative Process Driven Risk Management for Enterprise Agility." In: 2007 Inaugural IEEE-IES Digital EcoSystems and Technologies Conference. pp. 535–540.
- Kelton, W.D., Sadowski, R.P. and N.B. Zupick (2015). *Simulation with Arena*. 6th Edition. New York: McGraw Hill Education.
- Kettinger, W.J., Teng, J.T.C. and S. Guha (1997). "Business Process Change: A Study of Methodologies, Techniques, and Tools." *MISO* 21(1), 55–98.
- Kim, C., Son, Y.-J., Kim, T. and K. Kim (2008). "A virtual enterprise design method based on business process simulation." *International Journal of Computer Integrated Manufacturing* 21(7), 857–868.
- Kloos, M., Hulstijn, J., Seck, M. and M. Janssen (2014). "XBRL-Driven Business Process Improvement: A Simulation Study in the Accounting Domain." In: *Revised Selected Papers of the SEFM 2013 Collocated Workshops on Software Engineering and Formal Methods Volume 8368*. Springer-Verlag. New York: NY, pp. 288–305.
- Kloos, O. (2014). "Generierung von Simulationsmodellen auf der Grundlage von Prozessmodellen. PhD Thesis." University of Ilmenau.
- Kloos, O., Nissen, V. and M. Petsch (2009). "From process to simulation-a transformation model approach." In: *3rd International Workshop on Enterprise Modelling and Information Systems Architectures*. Ulm: Germany, pp. 83–96.
- Kloos, O., Nissen, V., Petsch, M. and H. Schorcht (2011). "Service Modelling as a Basis for Simulation." *Enterprise Modelling and Information Systems Architectures* 6(2), 21–34.
- Kloos, O., Schorcht, H., Petsch, M. and V. Nissen (2010). "Dienstleistungsmodellierung als Grundlage für eine Simulation." In: *Dienstleistungsmodellierung 2010*. Ed. by O. Thomas and M. Nüttgens. Physica-Verlag HD. Heidelberg: Germany, pp. 86–106.
- Koide, A., Liu, T.-K., Ramachandran, B. and M. Kano (2004). "Business process simulation with IT depth." In: *IEEE International Conference on E-Commerce Technology for Dynamic E-Business*. pp. 333–336.

- Koizumi, S. and K. Koyama (2007). "Workload-aware Business Process Simulation with Statistical Service Analysis and Timed Petri Net." In: *IEEE International Conference on Web Services (ICWS 2007)*. pp. 70–77.
- Kostanyan, A., Matevosyan, V., Shoukourian, S. and A. Varosyan (2009). "An Approach for Formal Verification of Business Processes." In: *Proceedings of the 2009 Spring Simulation Multiconference, SpringSim* '09. Society for Computer Simulation International. San Diego: CA, pp. 134:1–134:8.
- Kumar, D. and S. Harous (1990). "An approach towards distributed simulation of timed petri nets." In: *Simulation Conference, 1990. Proceedings., Winter.* IEEE. New Orleans: LA, pp. 428–435.
- Laguna, M. and J. Marklund (2013). *Business process modeling, simulation, and design.* 2snd Edition. Boca Raton: Taylor & Francis.
- Lainema, T. (2001). "Enhancing participant business process perception through business gaming." In: *Proceedings of the 34th Annual Hawaii International Conference on System Sciences*. Maui: HI, pp. 1–10.
- Lainema, T. and O.-P. Hilmola (2005). "Learn more, better and faster: computer-based simulation gaming of production and operations." *International Journal of Business Performance Management* 7(1), 34–59.
- Lang, M., Wehner, B., Falk, T., Griesberger, P. and S. Leist (2015). "Evaluating Business Process Improvement Patterns by Simulation." In: *Twenty-Third European Conference on Information Systems (ECIS)*. Paper 117.
- Law, A.M. (2015). Simulation Modeling and Analysis. 5th Edition. New York: McGraw-Hill Education.
 Le, C., Yuan, L., Zhengping, S. and L. Jiani (2011). "Development of Equipment Command Office federate based on workflow management software." In: 2011 Chinese Control and Decision Conference (CCDC). pp. 2123–2126.
- Le, C., Yubo, C., Yongli, Y. and Z. Liu (2007). "Workflow Simulation for Maintenance Support of Electronic Instrument Based on HLA." In: 2007 8th International Conference on Electronic Measurement and Instruments. pp. 2-259–2-263.
- Lee, J., Gruninger, M., Jin, Y., Malone, T., Tate, A., G. Yost (1998). "The Process Interchange Format and Framework." *The Knowledge Engineering Review* 13(1), 91–120.
- Lei, L. and R. Li (2011). "Research on workflow simulation oriented enterprise process." In: 2011 2nd International Conference on Artificial Intelligence, Management Science and Electronic Commerce (AIMSEC). pp. 2378–2382.
- Lendermann, P., Julka, N., Chan, L.P. and B.P. Gan (2003). "The process of process reengineering: integration of discrete event simulation models with framework-based business applications." In: *Proceedings of the 35th Conference on Winter Simulation: Driving Innovation*. Winter Simulation Conference. pp. 1797–1804.
- Leyer, M. and M. Hollmann (2014). "Introduction of electronic documents: how business process simulation can help." *Business Process Management Journal* 20(6), 950.
- Lim, J., Choi, O.-H. and D.-K. Baik (2008). "An Evaluation Method for Dynamic Combination Among OSGi Bundles Based on Service Gateway Capability." *IEEE Trans. on Consum. Electron.* 54(4), 1698–1704.
- Liu, Y. and J. Iijima (2015a). "A Case Study of Business Process Simulation in the Context of Enterprise Engineering." In: Advances in Enterprise Engineering IX. EEWC 2015. Ed. by D. Aveiro, R. Pergl and M. Valenta. Springer International Publishing. pp. 96–110.
- Liu, Y. and J. Iijima (2015b). "Business process simulation in the context of enterprise engineering." *Journal of Simulation* 9(3), 206–222.
- Liu, Y. and J. Iijima (2014). "Automatic Model Transformation for Enterprise Simulation." In: *Advances in Enterprise Engineering VIII: 4th Enterprise Engineering Working Conference, EEWC 2014.* Ed. by D. Aveiro, J. Tribolet and D. Gouveia. Springer International Publishing Funchal: Portugal, pp. 136–150.
- Liu, Y., Zhang, H., Li, C. and R.J. Jiao (2012). "Workflow simulation for operational decision support using event graph through process mining." *Decision Support Systems* 52(3), 685–697.
- Loon, H.S. (1999). "Book Reviews." Journal of Consumer Affairs 33(1), 215.
- Łosiewicz-Dniestrzańska, E. (2012). "Pomiar jakości procesu realizacji usługi bankowej." *Quality Measurement of the Banking Service Process* (265), 260–270.

- Lübbecke, P., Reiter, M., Fettke, P. and P. Loos (2015). "Simulation-Based Decision Support for the Reduction of the Energy Consumption of Complex Business Processes." In: 2015 48th Hawaii International Conference On System Sciences (HICSS). pp. 866–875.
- Mans, R., Reijers, H., Wismeijer, D. and M. Van Genuchten (2013). "A Process-oriented Methodology for Evaluating the Impact of IT: A Proposal and an Application in Healthcare." *Information Systems* 38(8), 1097–1115.
- Martin, N., Benoît, B. and A. Caris (2014a). "Event log knowledge as a complementary simulation model construction input." In: *Proceedings of the 4th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*. pp. 456–462.
- Martin, N., Depaire, B. and A. Caris (2016). "The Use of Process Mining in Business Process Simulation Model Construction: Structuring the Field." *Business & Information Systems Engineering* 58(1), 73–87.
- Martin, N., Depaire, B. and A. Caris (2015). "Using Process Mining to Model Interarrival Times: Investigating the Sensitivity of the Arpra Framework." In: *Proceedings of the 2015 Winter Simulation Conference, WSC '15.* IEEE Press. Piscataway: NJ, pp. 868–879.
- Martin, N., Depaire, B. and A. Caris (2014b). "The use of process mining in a business process simulation context: Overview and challenges." In: 2014 IEEE Symposium On Computational Intelligence and Data Mining (CIDM). pp. 381–388.
- Maryam N. and S. A. Khan (2017). "Business process re-engineering for smart manufacturing". In: *IEEE 8th Annual Ubiquitous Computing, Electronics and Mobile Communication Conference (UEMCON)*. IEEE. New York: NY, pp. 424–430.
- Melão, N. and M. Pidd (2006). "Using component technology to develop a simulation library for business process modelling." *European Journal of Operational Research* 172(1), 163–178.
- Melão, N. and M. Pidd (2003). "Use of business process simulation: A survey of practitioners." *Journal of the Operational Research Society* 54(1), 2–10.
- Melão, N.F.R. (2001). "Improving the effectiveness of business process modelling and simulation." PhD thesis. Lancaster University, United Kingdom.
- Merunka, V. (2012). "FSM-Based Object-Oriented Organization Modeling and Simulation." In: *Advanced Information Systems Engineering Workshops CAiSE 2012 International Workshops*. Gdańsk: Poland, pp. 398–412.
- Merunka, V., Nouza, O. and J. Brožek (2008). "Automated Model Transformations Using the C.C Language." In: Advances in Enterprise Engineering I. Ed. by J.L.G. Dietz, A. Albani and J. Barjis. Springer. Berlin, Heidelberg, pp. 137–151.
- Milton, S.M. (2000). "Process Release 3.0." Long Range Planning 33(3), 440-442.
- Mohammadi, M., Mukhtar, M.B. and H.R. Peikari (2011). "A Grammar-based Process Modeling and Simulation Methodology for Supply Chain Management." In: *Proceedings of the Second International Conference on Visual Informatics: Sustaining Research and Innovations Volume Part I, IVIC'11*. Springer-Verlag. Berlin, Heidelberg, pp. 77–86.
- Morales, P.J. (2011). "A Computational Econometric Modeling Technique for the Parametric Simulation of Effort and Duration Estimation As Applied to the Development of Software Systems." Pace University, New York: NY.
- Mrajca, M. and Z. Brabec (2011). "Probabilistic description of the NGOSS Change Management process." In: 2011 2nd National Conference On Telecommunications (CONA TEL). pp. 1–4.
- Nakatumba, J., Westergaard, M. and W.M.P. van der Aalst (2012). "Generating Event Logs with Workload-Dependent Speeds from Simulation Models." In: *Advanced Information Systems Engineering Workshops CAiSE 2012 International Workshops*. Gdańsk: Poland, pp. 383–397.
- Nikolaos, P., Stavros, P. and A. Dimitrios (2006). "An Integrated Balanced Scorecard and Simulation Approach for Measuring Call Centre Operation Performance." In: *Proceedings of the 5th WSEAS International Conference on Data Networks, Communications and Computers, DNCOCO'06. World Scientific and Engineering Academy and Society (WSEAS).* Stevens Point: WI, pp. 275–280.
- Nissen, M.E. (1994). "Qualitative simulation of organizational microprocesses." In: *Hawaii International Conference on System Sciences (HICSS)*. pp. 635–644.
- Oberweis, A. (1996). *Modellierung und Ausführung von Workflows mit Petri-Netzen*. Teubner-Reihe Wirtschaftsinformatik. Stuttgart: Teubner.

- Painter, M.K., Fernandes, R., Padmanaban, N. and R.J. Mayer (1996). "A methodology for integrating business process and information infrastructure models." In: *Proceedings of the 28th Conference on Winter Simulation, WSC '96.* IEEE Computer Society. Washington DC: USA, pp. 1305–1312.
- Pandey, S., Nepal, S. and S. Chen (2012). "Business Process Engine Simulator." *In: Proceedings of the 2012 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (Ccgrid 2012), CCGRID '12.* IEEE Computer Society. Washington DC: USA, pp. 711–713.
- Pandey, S., Nepal, S. and S. Chen (2011). "A test-bed for the evaluation of business process prediction techniques." In: 7th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom). pp. 382–391.
- Park, S., Kim, H., Kang, D. and D.-H. Bae (2008). "Developing a Simulation Model Using a SPEM-Based Process Model and Analytical Models." In: *Advances in Enterprise Engineering I: 4th International Workshop CIAO! And 4th International Workshop EOMAS, Held at CAiSE 2008.* Ed. by J.L.G. Dietz, A. Albani and J. Barjis. Springer. Berlin, Heidelberg. Montpellier: France, pp. 164–178.
- Paul, R.J., Giaglis, G.M. and V. Hlupic (1999). "Simulation of Business Processes." *American Behavioral Scientist* 42(10), 1551.
- Paul, R.J. and A. Serrano (2004). "Collaborative information systems and business process design using simulation." In: *Proceedings of the 37th Annual Hawaii International Conference On System Sciences*. IEEE, pp. 10.
- Paul, R.J. and A. Serrano (2003). "Simulation for business processes and information systems design." In: *Proceedings of the 2003 Winter Simulation Conference*. IEEE, pp. 1787–1796.
- Peters, L. and R. Schultz (1993). "The application of Petri-nets in object-oriented enterprise simulations." In: *Proceedings of the Twenty-Sixth Hawaii International Conference on System Sciences*. pp. 390–398.
- Podloucký, M. and R. Pergl (2014). "The Prefix Machine a Formal Foundation for the BORM OR Diagrams Validation and Simulation." In: *Enterprise and Organizational Modeling and Simulation 10th International Workshop, EOMAS 2014, Held at CAiSE 2014.* Thessaloniki: Greece, pp. 113–131.
- Prackwieser, C., Buchmann, R., Grossmann, W. and D. Karagiannis (2014). "Overcoming Heterogeneity in Business Process Modeling with Rule-Based Semantic Mappings." *International Journal of Software Engineering & Knowledge Engineering* 24(8), 1131–1158.
- Perakath, Benjamin C., Delen, D. and M. Erraguntla (1998). "An introduction to using PROSIM for business process simulation and analysis." In: Proceedings of the 30th Conference on Winter Simulation. IEEE Computer Society Press. Los Alamitos: CA, pp. 315–321.
- Profozich, D. (1997). *Managing Change with Business Process Simulation*. Upple Saddle River: Prentice Hall PTR.
- Promsakul K. and S. Limsiroratana (2017). "Workflow simulation based on cloud platform for office automation system." In: *IEEE 14th International Joint Conference on Computer Science and Software Engineering (JCSSE)*, IEEE, Nakhon Si Thammarat, Thailand, pp. 1–5.
- Pufahl L., Wong T. Y. and M. Weske (2018). "Design of an Extensible BPMN Process Simulator." Ed. by E. Teniente, M. Weidlich. In: *Business Process Management Workshops*. Ed. by E. Teniente and M. Weidlich. Springer: Cham, pp. 782–795.
- Pun, K.-I., Pau, K.-C. and Y.-W. Si (2008). "Modeling Support for Simulating Traffic Intensive Web Applications." In: *Proceedings of the 2008 IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology Volume 03, WI-IAT '08*. IEEE Computer Society. Washington DC: USA, pp. 512–516.
- Ramachandran, B., Fujiwara, K., Kano, M., Koide, A. and J. Benayon (2006). "Business Process Transformation Patterns & the Business Process Transformation Wizard." In: *Proceedings of the 2006 Winter Simulation Conference, WSC '06.* Winter Simulation Conference. Monterey: CA, pp. 636–641.
- Recker, J. (2010). "Opportunities and constraints: the current struggle with BPMN." *Business Process Management Journal* 16(1), 181–201.
- Reijers, H.A. and W.M.P. van der Aalst (2005). "The effectiveness of workflow management systems: Predictions and lessons learned." *International Journal of Information Management* 25(5), 458–472.

- Ren, C., Wang, W., Dong, J., Ding, H., Shao, B. and Q. Wang (2008). "Towards a flexible business process modeling and simulation environment." In: *Proceedings of the 40th Conference on Winter Simulation, WSC '08.* Winter Simulation Conference. Miami: FL, pp. 1694–1701.
- Robinson, W.N. and Y. Ding (2010). "A Survey of Customization Support in Agent-based Business Process Simulation Tools." *ACM Transactions on Modeling and Computer Simulation (TOMACS)* 20(3), 14:1–14:29.
- Roelens B. and G. Poels (2017). "The Design of a Modeling Technique to Analyze the Impact of Process Simulation Throughout the Business Architecture." In: *13th International Workshop Enterprise and Organizational Modeling and Simulation (EOMAS) held at CAiSE 2017*. Ed. by R. Pergl, R. Lock, E. Babkin and M. Molhanec. Essen: Germany. pp. 37–52.
- Rondini A., Tornese F., Gnoni M. G., Pezzotta G. and R. Pinto (2017). "Hybrid simulation modelling as a supporting tool for sustainable product service systems: a critical analysis." In: *International Journal of Production Research* 55(23), 6932–6945.
- Rossi, D., Turrini, E. and F. Vitali (2009). "Simulating Business Processes with EPML.SIM." In: *Proceedings of the 2009 ACM Symposium on Applied Computing, SAC '09*. ACM. New York: NY, pp. 2101–2102.
- Rozinat, A., Wynn, M.T., Aalst, W.M.P. van der, Hofstede, A.H.M. ter and C.J. Fidge (2009). "Workflow simulation for operational decision support." *Data & Knowledge Engineering* 68(9), 834–850.
- Rozinat, A., Wynn, M.T., Aalst, W.M.P. van der, Hofstede, A.H.M. ter and C.J. Fidge (2008). "Workflow Simulation for Operational Decision Support Using Design, Historic and State Information." In: *Business Process Management, 6th International Conference, BPM 2008.* Milan: Italy, pp. 196–211.
- Rusinaitė, T., Kalibatienė, D. and O. Vasilecas (2015). "Requirements of dynamic business processes a survey." In: 2015 IEEE 3rd Workshop on Advances in Information, Electronic and Electrical Engineering (AIEEE). pp. 1–4.
- Rusinaite, T., Vasilecas, O., Savickas, T., Vysockis, T. and K. Normantas (2016). "An Approach for Allocation of Shared Resources in the Rule-based Business Process Simulation." In: *Proceedings of the 17th International Conference on Computer Systems and Technologies 2016, CompSysTech '16.* ACM. New York: NY, pp. 25–32.
- Safari, A. (2016). "An Effective Practical Approach for Business Process Modeling and Simulation in Service Industries." *Knowledge & Process Management* 23(1), 31–45.
- Sakkas, N., Malkewitz, R. and D. Apostolou (1999). "The Rise of the Hyper-chain: Business Effects of Emerging Internet-enabled Information Systems. Early Experiences from the Wood/Furniture Sector." *International Journal of Information Management* 19(4), 305–318.
- Salmi, A., Kronqvist, J. and P. Pöyry-Lassila (2010). "Supporting Empathy in Business Process Simulation with Scenarios." In: *Proceedings of the 14th International Academic MindTrek Conference: Envisioning Future Media Environments, MindTrek '10.* ACM. New York: NY, pp. 237–241.
- Salomie, I., Cioara, T., Anghel, I., Dinsoreanu, M. and T.I. Salomie (2007). "Machine and Business Modeling and Simulation for Workflow Integration." In: *Proceedings of the 9th WSEAS International Conference on Automatic Control, Modelling and Simulation, ACMOS'07*. World Scientific and Engineering Academy and Society (WSEAS). Stevens Point: WI, pp. 166–171.
- Samota, J. (1998). "Teaching New Software Skills and Business Processes to Q&R Engineers." In: *Proceedings of the 28th Annual Frontiers in Education Volume 03, FIE '98.* IEEE Computer Society. Washington DC: USA, pp. 1267–1266.
- Sarker, S. and A.S. Lee (2006). "Does the use of computer-based BPC tools contribute to redesign effectiveness? Insights from a hermeneutic study." *IEEE Transactions on Engineering Management* 53(1), 130–145.
- Savolainen, T. (1997). "Simulation Games in CIM and the Learning Organisation." Computers in Industry 33(2-3), 217–221.
- Schmietendorf, A. and A. End (2009). "A prototypical simulation model to analyze the business process performance." In: *International Workshop on Software Measurement*. Springer, pp. 130–143.
- Schmitt, M., Incoul, C. and E. Dubois (2006). "Supporting Business Experts in the Design of B2B Transactions Through Interactive Process Simulation." In: *Proceedings of the Third International*

- Conference on Business Process Management, BPM'05. Springer-Verlag. Berlin, Heidelberg, pp. 342–352.
- Schonenberg, H., Jian, J., Sidorova, N. and W. van der Aalst (2010). "Business Trend Analysis by Simulation." In: *Proceedings of the 22Nd International Conference on Advanced Information Systems Engineering, CAiSE'10.* Springer-Verlag. Berlin, Heidelberg, pp. 515–529.
- Seror, A.C. (1994). "Simulation of complex organizational processes: A review of methods and their epistemological foundations." In: *Simulating Societies: The Computer Simulation of Social Phenomena*. Ed. by N. Gilbert and J. Doran. London: UCL Press.
- Serrano, A. and M. den Hengst (2005). "Modelling the integration of BP and IT using business process simulation." *Journal of Enterprise Information Management* 18(6), 740–759.
- Shrader, S. (2001). "Business Process Simulation: Simulation in Government: Validating Business Strategy." In: *Proceedings of the 33Nd Conference on Winter Simulation, WSC '01*. IEEE Computer Society. Washington DC: USA, pp. 1259–1261.
- Smeds, R. and J. Alvesalo (2003). "Telepresence in cross-site business process simulation lessons learnt in technology, social interaction and organizational learning." *Production Planning & Control* 14(2), 182.
- Song, H.G. and K. Lee (2005). "sPAC (Web Services Performance Analysis Center): Performance Analysis and Estimation Tool of Web Services." In: *Proceedings of the 3rd International Conference on Business Process Management, BPM'05.* Springer-Verlag. Berlin, Heidelberg, pp. 109–119.
- Sonnenberg, C. and J. vom Brocke (2014). "The missing link between BPM and accounting: Using event data for accounting in process-oriented organizations." *Business Process Management Journal* 20(2), 213–246.
- Spieß, P., Nguyen, D.K., Weber, I., Markovic, I. and M. Beigl (2008). "Modelling, Simulation, and Performance Analysis of Business Processes Involving Ubiquitous Systems." In: *Advanced Information Systems Engineering: 20th International Conference, CAiSE 2008.* Ed. by Z. Bellahsène and M. Léonard. Montpellier: France, pp. 579–582.
- Stankevicius, K. and O. Vasilecas (2016). "An approach on long running business process modelling and simulation." In: 2016 Open Conference of Electrical, Electronic and Information Sciences (EStream). pp. 1–4.
- Stipravietis, P. and M. Ziema (2011). "The Design of Electronic Service Process Using YAWL and CPN Tools." In: *Proceedings of the 2011 Conference on Databases and Information Systems VI: Selected Papers from the Ninth International Baltic Conference, DB&IS 2010.* IOS Press. Amsterdam: The Netherlands, pp. 183–196.
- Sun, J.W., Barjis, J., Verbraeck, A., Janssen, M. and J. Kort (2009). "Capturing Complex Business Processes Interdependencies Using Modeling and Simulation in a Multi-actor Environment." In: Advances in Enterprise Engineering III: 5th International Workshop, CIAO! 2009, and 5th International Workshop, EOMAS 2009, Held at CAiSE 2009. Ed. by A. Albani, J. Barjis and J.L.G Dietz. Amsterdam: The Netherlands, pp. 16–27.
- Swami, A. (1995). "Building the business using process simulation." In: *Winter Simulation Conference Proceedings*. IEEE, pp. 1081–1086.
- Tan, W., Li, S. and W. Shen (2006). "A Dynamic Evaluation Methodology for Enterprise Business Process." In: 2006 10th International Conference on Computer Supported Cooperative Work in Design. pp. 1–6.
- Tan, W., Li, S., Tang, A. and W. Shen (2007). "A Workflow Simulation Framework Based on Multiagent Cooperation." In: 2007 11th International Conference on Computer Supported Cooperative Work in Design. pp. 828–833.
- Tan, WenAn, Shen, W. and J. Zhao (2007). "A methodology for dynamic enterprise process performance evaluation." *Computers in Industry* 58(5), 474–485.
- Tan, W., Xu, W., Yang, F., Xu, L. and C. Jiang (2013). "A framework for service enterprise workflow simulation with multi-agents cooperation." *Enterprise Information Systems* 7(4), 523–542.
- Tan, W. and F. Yang (2008). "An approach on Business process cooperation based on Ontology." In: 2008 Third International Conference on Pervasive Computing and Applications. pp. 644–649.
- Tan, W., Yang, F. and W. Shen (2010). "An approach on business process ontology for CSCW using PSL." In: *The 2010 14th International Conference on Computer Supported Cooperative Work in Design.* pp. 239–244.

- Tan, W., Zhao, J. nd W. Shen (2006). "A Simulation-based Dynamic Evaluation Methodology for Enterprise Process Performance." In: *Proceedings of the 17th IASTED International Conference on Modelling and Simulation, MS'06.* ACTA Press. Anaheim: CA, pp. 603–608.
- Tan, W.-A., Tang, A. and W. Shen (2006). "A Simulation-based Process Evaluation Approach to Enterprise Business Process Intelligence." In: *Proceedings of the 2006 International Conference on Intelligent Computing Volume Part I, ICIC'06*. pp. 953–963.
- Tan, Y. (2010). "Integrated simulation modeling for business process management: A case study in the machine manufacturing industry." In: 2010 IEEE 17Th International Conference on Industrial Engineering and Engineering Management. pp. 1546–1550.
- Tan, Y. (2009). "Simulation analysis on the performance of the sales and distribution process with enhanced information systems." In: 2009 16th International Conference on Industrial Engineering and Engineering Management. pp. 1852–1855.
- Tan, Y. and S. Takakuwa (2007). "Predicting the Impact on Business Performance of Enhanced Information System Using Business Process Simulation." In: *Proceedings of the 39th Conference on Winter Simulation: 40 Years! The Best Is Yet to Come, WSC '07.* IEEE Press. Piscataway: NJ, pp. 2203–2211.
- Tang, H., Chen, Y. and L. Jiansa (2006). "Architecture of process mining based business process optimization." In: 2006 International Technology and Innovation Conference (ITIC 2006). pp. 1066–1069.
- Tarumi, H., Matsuyama, T. and Y. Kamabayashi (1999). "Evolution of business processes and a process simulation tool." In: *Software Engineering Conference*, 1999. (APSEC '99) Proceedings. Sixth Asia Pacific. pp. 180–187.
- Tarumi, Hiroyuki, Mizutani, S., Matsuyama, T. and Y. Kambayashi (1999). "Simulation of Agent-Based Groupware with Human Factors." In: *Proceedings of the 1999 International Symposium on Database Applications in Non-Traditional Environments, DANTE '99.* IEEE Computer Society. Washington DC: USA, pp. 343.
- Tjoa, S., Jakoubi, S., Goluch, G., Kitzler, G., Goluch, S. and G. Quirchmayr (2011). "A Formal Approach Enabling Risk-Aware Business Process Modeling and Simulation." *IEEE Transactions on Services Computing* 4(2), 153–166.
- Tjoa, S., Jakoubi, S. and G. Quirchmayr (2008). "Enhancing Business Impact Analysis and Risk Assessment Applying a Risk-Aware Business Process Modeling and Simulation Methodology." In: *Third International Conference On Availability, Reliability and Security, 2008. ARES 08.* pp. 179–186.
- Tsalgatidou, A., Louridas, P., Fesakis, G. and T. Schizas (1996). "Multilevel Petri Nets for Modeling and Simulating Organizational Dynamic Behavior." *Simulation & Gaming* 27(4), 484–506.
- Tumay, K. (1996a). "Business Process Simulation." In: *Proceedings of the 1995 Winter Simulation Conference, WSC '95. Presented at the Conference On Winter Simulation.* IEEE Computer Society. Washington DC: USA, pp. 55–60.
- Tumay, K. (1996b). "Business Process Simulation." In: *Proceedings of the 28th Conference on Winter Simulation, WSC '96.* IEEE Computer Society. Washington DC: USA, pp. 93–98.
- Uthmann, C. v. and J. Becker (1999). "Guidelines of Modelling (GoM) for Business Process Simulation." In: *Process Modelling*. Ed. by B. Scholz-Reiter, H.-D. Stahlmann and A. Nethe. Springer. Berlin, Heidelberg, pp. 100–116.
- van der Aalst, W.M.P. (2015). "Business Process Simulation Survival Guide." In: *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems.* Ed. by J. vom Brocke and M. Rosemann. Springer. Berlin, Heidelberg, pp. 337–370.
- van der Aalst, W.M.P. (2010). "Business Process Simulation Revisited." In: *Enterprise and Organizational Modeling and Simulation: 6th International Workshop, EOMAS 2010, Held at CAiSE 2010.* Ed. by J. Barjis. Hammamet: Tunisia, pp. 1–14.
- van Hee, K.M. and H.A. Reijers (2000). "Using Formal Analysis Techniques in Business Process Redesign." In: *Business Process Management: Models, Techniques, and Empirical Studies*. Ed. by W. van der Aalst, J. Desel and A. Oberweis. Springer. Berlin, Heidelberg, pp. 142–160.
- Varga, A. and R. Hornig (2008). "An Overview of the OMNeT++ Simulation Environment." In: Proceedings of the 1st International Conference on Simulation Tools and Techniques for Communications, Networks and Systems & Workshops, Simutools '08. ICST (Institute for Computer

- Sciences, Social-Informatics and Telecommunications Engineering). ICST. Brussels: Belgium, pp. 60:1–60:10.
- Vasilecas, Olegas, Kalibatiene, D. and D. Lavbič (2016). "Rule- and Context-based Dynamic Business Process Modelling and Simulation." *Journal of Systems and Software* 122(C), 1–15.
- Vasilecas, O., Smaižys, A. and A. Rima (2013). "Business process modelling and simulation: hybrid method for concurrency aspect modelling." *Baltic Journal of Modern Computing* 1(3-4), 228–243.
- Vasilecas, O., Vysockis, T. and T. Rusinaite (2016). "On goal-oriented business process simulation." In: 2016 IEEE 4th Workshop on Advances in Information, Electronic and Electrical Engineering (AIEEE). pp. 1–4.
- Vassos, V., Michalis, M., Niki, C., Stavros, C. and C. Marios (2011). "Preliminary Analysis for Adopting High Pressure Treatment: A Simulation-based Approach." In: *Proceedings of the 2Nd International Conference on Mathematical Models for Engineering Science, and Proceedings of the 2Nd International Conference on Development, Energy, Environment, Economics, and Proceedings of the 2Nd International Conference on Communication and Management in Technological Innovation and Academic Globalization, MMES'11/DEEE'11/COMATIA'11.* World Scientific and Engineering Academy and Society (WSEAS). Stevens Point: WI, pp. 54–59.
- Völkner, P. and B. Werners (2002). "A Simulation-based Decision Support System for Business Process Planning." *Fuzzy Sets and Systems* 125(3), 275–287.
- Vymetal, D. and F. Jezek (2014). "Demand function and its role in a business simulator". *Journal of Advanced Research in Management (De Gruyter Open)* 5(1), 41–47.
- Vymětal, D., Spišák, M. and R. Šperka (2012). "An Influence of Random Number Generation Function to Multiagent Systems." In: *Proceedings of the 6th KES International Conference on Agent and Multi-Agent Systems: Technologies and Applications, KES-AMSTA'12*. Springer-Verlag. Berlin, Heidelberg, pp. 340–349.
- Wagner, G., Nicolae, O. and J. Werner (2009). "Extending Discrete Event Simulation by Adding an Activity Concept for Business Process Modeling and Simulation." In: *Winter Simulation Conference, WSC '09*. Winter Simulation Conference. Austin: TX, pp. 2951–2962.
- Wagner, G., Seck, M. and F. McKenzie (2016). "Process modeling for simulation: Observations and open issues." In: *Winter Simulation Conference (WSC)*, 2016. IEEE, pp. 1072–1083.
- Waller, A., Clark, M. and L. Enstone (2006). "L-SIM: Simulating BPMN diagrams with a purpose built engine." In: *Proceedings of the 2006 Winter Simulation Conference*. IEEE, pp. 591–597.
- Wan, H., Zheng, Y., Chen, Y. and L. Li (2006). "Building Business Process Description and Reasoning Meta-model Mbp in A-prolog." In: *Proceedings of the 2006 International Conference on Software Process Simulation and Modeling, SPW/ProSim'06.* Springer-Verlag. Berlin, Heidelberg, pp. 195–203
- Wandt, R., Friedewald, A. and H. Lödding (2012). "Simulation aided disturbance management in one-of-a-kind production on the assembly site." In: 2012 IEEE International Conference on Industrial Engineering and Engineering Management. pp. 503–507.
- Wang, H., Sun, S., Xu, J., Shi, F. and N. Zou (2008). "Petri Net Based Business Process Simulation and Analysis Technology." In: 2008 International Conference on Information Management, Innovation Management and Industrial Engineering. pp. 148–152.
- Wang, W., Chai, Y., Dong, J., Ding, H., Ren, C. and M. Qiu (2011). "Evaluating the value of collaboration in supply chain through business process simulation." In: 2011 IEEE International Conference On Service Operations, Logistics, and Informatics (SOLI). pp. 307–312.
- Wang, W., Dong, J., Ding, H., Ren, C. and M. Qiu (2009). "Quantifying the Value of Collaboration in Supply Chain Management Through Business Process Simulation." In: *Winter Simulation Conference, WSC '09*. Winter Simulation Conference. Austin: TX, pp. 2931–2939.
- Warren, J.R., MacArthur, P.J. and R.L. Crosslin (1994). "A dynamic modeling toolkit to add rigor to business process re-engineering." In: *Proceedings of the Twenty-Seventh Annual Hawaii International Conference on System Sciences HICSS (4)*. pp. 683–692.
- Weber, I., Paik, H.-Y. and B. Benatallah (2013). "Form-Based Web Service Composition for Domain Experts." *ACM Transactions on the Web (TWEB)* 8(1), 2:1–2:40.
- Wu, X., Chen, L. and L. Zhang (2011). "Logistics distribution business process simulation and optimization based on Petri nets." In: 2011 6th International Conference on Pervasive Computing and Applications. pp. 126–128.

- Wynn, M.T., Dumas, M., Fidge, C.J., Hofstede, A.H.M. ter and W.M.P. van der Aalst (2008). "Business Process Simulation for Operational Decision Support." In: *Business Process Management Workshops, BPM 2007 International Workshops, BPI, BPD, CBP, ProHealth, RefMod, Semantics4ws*. Brisbane: Australia, pp. 66–77.
- Xiang-qun, C. and G. Wei (2010). "Research on Workflow Model simulation technology." In: 2010 International Conference on Computer Application and System Modeling (ICCASM 2010). pp. V10-181-V10-184.
- Xiao, D. and Q. Luo (2010). "Interaction simulate method in business process simulation." In: 2010 International Conference on Service Sciences. pp. 319–323.
- Xiao, H., Chan, B., Zou, Y., Benayon, J.W., O'Farrell, B., Litani, E. and J. Hawkins (2008). "A Framework for Verifying SLA Compliance in Composed Services." In: 2008 IEEE International Conference on Web Services. pp. 457–464.
- Xie, Y. (2008a). "Integrating UML and GPSS for Business Process Modeling and Simulation." In: *Proceedings of the 8th WSEAS International Conference on Robotics, Control and Manufacturing Technology, ROCOM'08.* World Scientific and Engineering Academy and Society (WSEAS). Stevens Point: WI, pp. 64–69.
- Xie, Y. (2008b). "Process modeling and simulation based on extended UML activity and GPSS." In: 2008 IEEE International Conference on Automation and Logistics. IEEE, pp. 2931–2935.
- Xiong, G., Li, B., Chen, J., Li, J., Zhang, Y., Zhu, W. and S. Bai (1999). "Concurrent engineering research and application." *Tsinghua Science and Technology* 4(2), 1375–1385.
- Xu, H. and W. Chen (2012). "Based-on Pi-calculus Business Process Modeling." In: 2012 Second International Conference on Business Computing and Global Informatization. pp. 530–532.
- Yan, B., Gui, S. and B. Huang (2006). "Research on Methods of Modeling and Optimization Based on Web Logistics Business Process." In: *2006 Chinese Control Conference*. pp. 1722–1727.
- Yang, F., Tan, W., Shen, W., Ghenniwa, H.H. and Y. Xue (2010). "A dynamic critical path computation algorithm for enterprise process cooperative scheduling." In: *The 2010 14th International Conference on Computer Supported Cooperative Work in Design.* pp. 606–610.
- Zapf, M. (2004). "From the customer to the firm: evaluating generic service process designs for incoming customer requests." *Computers in Industry* 55(1), 53–71.
- Zapf, M., Lindheimer, U. and A. Heinzl (2007). "The myth of accelerating business processes through parallel job designs." *Information Systems & e-Business Management* 5(2), 117–137.
- Zarei, B. (2001). "Practical Parallel Computing." In: *Practical parallel computing*. Ed. by M. Paprzycki, L. Tarricone and L.T. Yang. Commack, NY: Nova Science Publishers, Inc., pp. 163–183.
- Zeigler, B.P., Praehofer, H. and T.G. Kim (2000). *Theory of Modeling and Simulation: Integrating Discrete Event and Continuous Complex Dynamic Systems*. 2nd Edition. San Diego, CA: Academic Press.
- Zeng, J., Jackson, S., Lin, I.J., Gustafson, M., Hoarau, E. and R. Mitchell (2013). "Operations simulation of on-demand digital print." In: *IEEE Conference Anthology*. pp. 1–5.
- Zeng, J. and J. Li (2013). "Operations simulation as a cloud based service." In: *IEEE Conference Anthology*. pp. 1–5.
- Zeng, S., Huang, S. and Y. Fan (2009). "Service-Oriented enterprise network performance analysis." Tsinghua Science and Technology 14(4), 492–503.
- Zhang, M. and G. Gable (2014). "Rethinking the Value of Simulation Methods in the Information Systems Research Field: A Call for Reconstructing Contribution for a Broader Audience." In: *Proceedings of the International Conference on Information Systems Building a Better World through Information Systems, ICIS 2014.* Auckland: New Zealand.
- Zhao, H. and J. Cao (2007). "A business process simulation environment based on workflow and multiagent." In: 2007 IEEE International Conference on Industrial Engineering and Engineering Management. pp. 1777–1781.
- Zhao, X. (2002). "Workflow Simulation Across Multiple Workflow Domains." In: *Proceedings of the 13th International Conference on Database and Expert Systems Applications, DEXA '02*. Springer-Verlag. London: UK, pp. 50–59.
- Zribi, S., Calabrò, A., Lonetti, F., Marchetti, E., Jorquera, T. and J.P. Lorré (2016). "Design of a simulation framework for model-based learning." In: 2016 4th International Conference on Model-Driven Engineering and Software Development (MODELSWARD). pp. 631–639.